

AMENDMENTS TO THE CLAIMS

This Listing of Claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

1. (Currently Amended) A cation electrocoating method comprising:
pre-treating a substance comprising an iron material at least in part by employing a
chemical conversion coating agent comprising for use in pretreatment of cationic
electrocoating for a substance to be treated, at least a part of which comprises an iron material,
consisting of
at least one kind selected from the group consisting of zirconium, titanium and hafnium; fluorine; and
an amine group-containing water-soluble epoxy compound having an isocyanate group,
wherein a content of the at least one kind selected from the group consisting of
zirconium, titanium and hafnium in the chemical conversion coating agent is 20 to 10000 ppm
in terms of metal, and
the amino group-containing water-soluble epoxy compound having an isocyanate group
is obtained by allowing an epoxy compound selected from the group consisting of bisphenol F
epichlorohydrin type epoxy compound containing an amino group and bisphenol A
epichlorohydrin type epoxy compound containing an amino group to react with partially
blocked polyisocyanate, and a content of the amino group-containing water-soluble epoxy
compound having an isocyanate group in the chemical conversion coating agent is 5 to 5000
ppm as a concentration of solid matter and wherein the pH of the agent is 1.5 to 6.5;
followed by water rinsing the pretreated substance and applying a cation electrocoating.
- 2.-7. (Cancelled)

8. (Currently Amended) A surface-treated metal ~~obtained by the method having a chemical conversion coat formed by the chemical conversion coating agent according to claim 1.~~

9. (Original) The surface-treated metal according to Claim 8, wherein the chemical conversion coat has a coat amount of 0. 1 to 500 mg/m² in sum of a total amount of metals contained in the chemical conversion coating agent and carbon contained in the water-soluble epoxy compound.

10.-12. (Cancelled)

13. (Currently Amended) ~~The method according to claim 1 wherein the A chemical conversion coating agent for use in pretreatment of cationic electrocoating for a substance to be treated, at least a part of which comprises an iron material, consisting of~~

~~at least one kind selected from the group consisting of zirconium, titanium and hafnium; fluorine; and~~

~~a water-soluble epoxy compound having an isocyanate group,~~

~~wherein a content of the at least one kind selected from the group consisting of zirconium, titanium and hafnium in the chemical conversion coating agent is 20 to 10000 ppm in terms of metal, and~~

~~a water-soluble epoxy compound having an isocyanate group is obtained by allowing an epoxy compound selected from the group consisting of bisphenol F-epichlorohydrin type epoxy compound containing an amino group and bisphenol A-epichlorohydrin type epoxy compound containing an amino group to react with partially blocked polyisocyanate, and a content of the amino group-containing water-soluble epoxy compound having an isocyanate group in the chemical conversion coating agent is 5 to 5000 ppm as a concentration of solid matter and~~

~~further contains containing 1 to 5000 ppm of at least one kind of a chemical conversion reaction accelerator selected from the group consisting of nitrite ions, nitro group-containing compounds, hydroxylamine sulfate, persulfate ions, sulfite ions, hyposulfite ions, peroxides, iron (III) ions,~~

citric acid iron compounds, bromate ions, perchlorinate ions, chlorate ions, chlorite ions as well as ascorbic acid, citric acid, tartaric acid, malonic acid, succinic acid and salts thereof; and wherein the water-soluble epoxy compound has an amino group and wherein the pH of the agent is 1.5 to 6.5.

14. (Cancelled)

15. (Currently Amended) The method according to claim 1 wherein the A chemical conversion coating agent for use in pretreatment of cationic electrocoating for a substance to be treated, at least a part of which comprises an iron material, consisting of

at least one kind selected from the group consisting of zirconium, titanium and hafnium; fluorine; and

an amine group-containing water-soluble epoxy compound having an isocyanate group;

wherein a content of the at least one kind selected from the group consisting of zirconium, titanium and hafnium in the chemical conversion coating agent is 20 to 10000 ppm in terms of metal; and

the amino group-containing water-soluble epoxy compound having an isocyanate group is obtained by allowing an epoxy compound selected from the group consisting of bisphenol F epichlorohydrin-type epoxy compound-containing an amino group and bisphenol A epichlorohydrin-type epoxy compound-containing an amino group to react with partially blocked polyisocyanate; and a content of the amino group-containing water-soluble epoxy compound having an isocyanate group in the chemical conversion coating agent is 5 to 5000 ppm as a concentration of solid matter and further containing contains

at least one kind selected from the group consisting of at least one kind of metal ions (A) selected from the group consisting of zinc ions, magnesium ions, calcium ions, aluminum ions, manganese ions and iron ions; copper ions (B); and a silicon-containing compound (C); and wherein the water-soluble epoxy compound has an amino group and wherein the pH of the agent is 1.5 to 6.5.

16.-17. (Cancelled)

18. (Currently Amended) The ~~method chemical conversion coating agent~~ according to claim 15, wherein the silicon-containing compound (C) is at least one kind selected from the group consisting of silica, water-soluble silicate compounds, esters of silicic acid, alkyl silicates and silane coupling agents.

19.-26. (Cancelled)